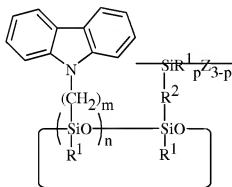


REMARKS

Claims 1 to 4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hohle et al. (C. Hohle, P. Strohiregl, "Bifunctional Cyclosiloxanes with Photorefractive Properties," SPIE Conference on Second-Order Organic Nonlinear Optics II, July 1999, pages 353-358) in view of Couillard et al. (Pub. No. US2005/0011434 A1) for the reasons of record.

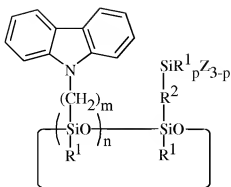
In particular, Examiner states that, with regard to Claim 1, Hohle et al. teaches a curable carbazoyl-functional cyclosiloxane having the formula:



wherein R^1 is C_1 to C_{10} hydrocarbyl free of aliphatic unsaturation; R^2 is $-CH_2-CHR^3-$ or $-CH_2-CHR^3-Y-$, wherein Y is a divalent organic group and R^3 is R^1 or $-H$; Z is a hydrolysable group; m is an integer from 2 to 10; n is 2, 3, 4, 5, or 6; and p is 0 or 1 (see pg. 355, Azo-CSX 3 used). However, Examiner further states that Hohle et al., does not teach having a $SiR^1_pZ_{3-p}$ attached to the R^2 group.

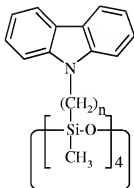
The rejection of claims 1 to 4 is respectfully traversed because the proposed combination of references does not teach or suggest Applicant's curable carbazoyl-functional cyclosiloxane.

The present invention is directed to a curable carbazoyl-functional cyclosiloxane having the formula:

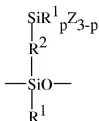


wherein R^1 is C_1 to C_{10} hydrocarbonyl free of aliphatic unsaturation; R^2 is $-\text{CH}_2-\text{CHR}^3-$ or $-\text{CH}_2-\text{CHR}^3-\text{Y}-$, wherein Y is a divalent organic group and R^3 is R^1 or H ; Z is a hydrolysable group; m is an integer from 2 to 10; n is 2, 3, 4, 5, or 6; and p is 0 or 1.

On the other hand, Hohle et al. teach a compound, Azo-CSX 3, having the formula:



where $n=3$. However, this cyclosiloxane *does not* contain Applicant's siloxane unit having the formula:



or any portion thereof. Instead Azo-CSX 3 consists of 4 identical siloxane units, each having a carbazolyl group attached to the silicon atom through a divalent $-\text{CH}_2\text{CH}_2\text{CH}_2-$ group.

Couillard et al. do not remedy the deficiency in the teaching of Hohle et al. Therefore, Applicant respectfully submits that claims 1 and 2, directed to a curable carbazoyl-functional cyclosiloxane, and claims 3 and 4, directed to a silicone composition comprising the curable cyclosiloxane, a condensation catalyst, and an organic solvent, are both novel and nonobvious over Hohle et al. in view of Couillard et al.

Claims 5 and 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hohle et al. in view of Couillard et al. and further in view of Wu et al. (Pub. No. US2005/0040392 A1) and further in view of Kitano et al. (Pub. No. US2003/0211358 A1) for the reasons of record.

The rejection of claims 5 and 6 is respectfully traversed because none of the references, alone or in combination, teach or suggest Applicant's organic light-emitting diode comprising:

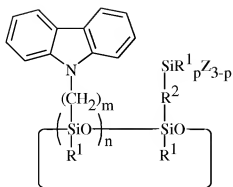
- a substrate having a first opposing surface and a second opposing surface;
- a first electrode layer overlying the first opposing surface;
- a light-emitting element overlying the first electrode layer, the light emitting element

comprising

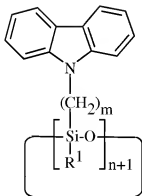
- a hole-transport layer and

- an electron-transport layer, wherein the hole-transport layer and the electron-transport layer lie directly on one another, and one of the hole-transport layer and the electron-transport layer comprises a carbazoyl-functional polysiloxane selected from

- a cured carbazoyl-functional polysiloxane prepared by curing a silicone composition comprising (A) at least one curable carbazoyl-functional cyclosiloxane having the formula:



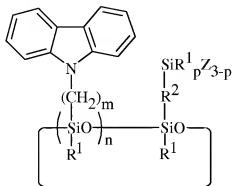
wherein R^1 is C_1 to C_{10} hydrocarbyl free of aliphatic unsaturation, R^2 is $-\text{CH}_2\text{-CHR}^3-$ or $-\text{CH}_2\text{-CHR}^3\text{-Y-}$, wherein Y is a divalent organic group and R^3 is R^1 or $-\text{H}$, Z is a hydrolysable group, m is an integer from 2 to 10, n is 2, 3, 4, 5, or 6, and p is 0 or 1, (B) a condensation catalyst, and (C) an organic solvent, and at least one carbazoyl-functional cyclosiloxane having the formula:



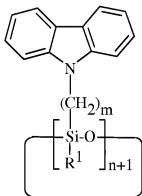
wherein R^1 is C_1 to C_{10} hydrocarbyl free of aliphatic unsaturation, m is an integer from 2 to 10, and n is 2, 3, 4, 5, or 6; and
a second electrode layer overlying the light-emitting element.

For the reasons stated above regarding claims 1 and 3, Hohle et al. and Couillard et al. do not teach or suggest Applicant's curable carbazoyl-functional cyclosiloxane or silicone composition comprising the cyclosiloxane.

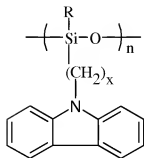
Furthermore, Kitano et al. do not teach or suggest using either a curable carbazoyl-functional cyclosiloxane having the formula:



or a “non-curable” carbazoyl-functional cyclosiloxane having the formula:



as the hole-transport material in an organic light-emitting diode. Instead, Kitano et al., in paragraph [0009], rely on the teaching of Patent Publication WO 9501871, which discloses only a non-curable linear polysiloxane having the formula:



(see page 12, lines 26-35).

Therefore, Applicant respectfully submits that claims 5 and 6, directed to an organic-light emitting diode, are both novel and nonobvious over Hohle et al. in view of Couillard et al. and further in view of Wu et al. and further in view of Kitano et al.

Claim 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Hohle et al., Couillard et al., Wu et al., and Kitano et al., as applied to claim 5 above, and further in view of Zhu et al. (Pub. No. US2004/0043313 A1) for the reasons of record.

The rejection of claim 7 is respectfully traversed because, for the reasons stated above regarding claims 5 and 6, the proposed combination of Hohle et al., Couillard et al., Wu et al., and Kitano et al. do not teach or suggest Applicant's organic light-emitting diode. Zhu et al. do not remedy this deficiency. In paragraph [0034], Zhu et al. merely list "carbazole derivatives" as suitable electron transport compounds. Zhu et al. do not teach or suggest the use of siloxanes of any kind, let alone carbazolyl-functional cyclosiloxanes, as electron-transport materials.

Therefore, Applicant respectfully submits that claim 7 directed to an organic-light emitting diode is both novel and nonobvious over Hohle et al., Couillard et al., Wu et al., Kitano et al., and Zhu et al.

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Respectfully Submitted,

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